

polishing the device to remove a part of the wiring metal residing higher than the upper peripheral level of the first concavity so as to leave a first metal layer in the first concavity;

applying a solution of an organic substance to the device so as to form a protective film of the organic substance on a surface of the first metal layer for preventing metal diffusion;

forming on the surface of the device a second insulating film contacting the first insulating film and the protective film;

making a second concavity in the second insulating film in a region above the first metal layer;

covering the second concavity with a second barrier layer; and

burying the second concavity covered with the second barrier layer with a second wiring metal layer, the second wiring metal layer contacting the first metal layer.

14. (Amended) A method of manufacturing a semiconductor device, comprising the steps of:

making a first concavity in a first insulating film of the device;

covering the first concavity with a first barrier layer for preventing metal diffusion;

burying the first concavity covered with the first barrier layer with a wiring metal;

polishing the device to remove a part of the wiring metal residing higher than an upper peripheral level of the first concavity to leave a first metal layer in the first concavity;

FINNEGAN
HENDERSON
FARABOW
GARRETT &
DUNNER LLP

1300 I Street, NW
Washington, DC 20005
202.408.4000
Fax 202.408.4400
www.finnegan.com

applying a solution of a compound onto the surface of the device so as to form a protective film for preventing metal diffusion on a surface of the first metal layer;

wherein the compound is stannous chloride, stannous borofluoride, stannous sulfate, nickel sulfate, nickel chloride, or nickel sulfamate;

forming on the device a second insulating film contacting the first insulating film and the protective film;

forming a second concavity in the second insulating film in a region above the first metal layer; and

covering the second concavity with a second barrier layer; and

burying the second concavity covered with the second barrier layer with a second wiring metal layer, the second wiring metal layer contacting the first metal layer.

B²
b²
C²
C²

16. (Amended) The method of claim 11, further comprising washing the device to eliminate particles therefrom, after the polishing.

B³

21. (Amended) The method of claim 14, further comprising washing the device to eliminate particles therefrom, after the polishing.

B⁴

REMARKS

Claims 11-21 remain pending in this application, claims 17-19 having been withdrawn from consideration. In the Office Action, the Examiner rejected claims 11 and 14 under 35 U.S.C. § 112, first paragraph, "as containing subject matter not described in the specification in such a way as to enable one skilled in the art...to make

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